

Amendments to the Specification

Please replace paragraph [0038] with the following amended paragraph:

[0038] **Figure 5** Figures 5A-5C ~~compares~~ compare the nitrogen concentration profiles for SiON or SiO_xN_y films manufactured using a plasma nitridation process with RTA-NH₃ process. In one embodiment, the plasma nitridation process used is Decoupled Plasma Nitridation (DPN) which is known in the art. DPN is a technology using inductive coupling to generate nitrogen plasma and incorporate a high level of nitrogen onto an oxide film. DPN allows formation of the silicon oxynitride film with less nitrogen at the oxide/substrate interface and higher nitrogen concentration at the oxide surface. In DPN, a surface, e.g., an SiO₂ film, is bombarded with nitrogen ions which break the SiO₂ film and bond the nitrogen ions to the SiO₂ film forming an SiON or SiO_xN_y film. The SiO₂ film is thus exposed to decoupled nitrogen plasma. In one embodiment, DPN is performed in a chamber with pressure ranging from about 5-20 mTorr or less than 10 Torr, in the presence of nitrogen gas with a flow rate ranging from about 100-200 sccm and plasma power of about 300 Watt. The DPN process parameters can be modified depending on the chamber size and volume thickness of the dielectric film as is known in the art. The DPN yields an SiON or SiO_xN_y film that does not have a second peak 202 at the substrate interface. In addition, in both processes, the DPN and the RTA-NH₃ processes, the SiON or SiO_xN_y film is characterized by having the greatest concentration of nitrogen (N_y) at the top surface of the dielectric film, with "y" decreasing with depth. However, the tail of the nitrogen concentration profile for the DPN process

seems to be extended closer to the Si substrate than the RTA-NH₃ process carried out at an ultra low processing pressure as shown in **Figures 5B-5C**. This will be reflected in the increased drive current of the device that incorporates the SiON or SiO_xN_y film formed using the RTA-NH₃ process than that of the SiON or SiO_xN_y film formed using the plasma nitridation process. In addition, the SiON or SiO_xN_y film formed using the RTA-NH₃ process will also be free of unassociated nitrogen. Another advantage of the RTA-NH₃ process over the DPN process is that it uses the same RTP reactor that has been developed and optimized for the front end anneals and SiO₂ growth. The RTP chamber has been optimized for ultra low metal contamination and issues that would eliminate or minimize any impact to the device integrity and reliability.